

Subject: Fw: Evaluation of Nutrient Removal - Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.  
From: Brian Nickel  
To: Kathleen Collins  
Date: 09/14/2011 02:42 PM

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Kathleen:

See below; the work that Ecology and TetraTech did may be useful in countering some of Boise's claims about exorbitant costs.

Ecology found that P removal to 0.1 mg/L can be paid for by increasing sewer rates by \$13 per month, on average, and that there is an economy of scale, so the Boise plants, being relatively large, may be able to upgrade for less than that.

Unfortunately the link to the report provided in Foroozan's message no longer works, and I don't appear to have saved a copy of it on my computer, but I imagine you could get a copy from Foroozan.

Also, according to Dave Ragsdale's report, chemical costs at Clean Water Services' other large WWTP that discharges to the Tualatin River (the Rock Creek plant), which did **not** have biological P removal, alum costs them about \$50 per million gallons of wastewater treated per day. However, other factors being equal, chemical costs should be lower at a plant that uses biological P removal (as Boise plans to).

Thanks,

Brian Nickel, E.I.T.

Environmental Engineer  
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<http://epa.gov/r10earth/waterpermits.htm>  
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----- Forwarded by Brian Nickel/R10/USEPA/US on 09/14/2011 02:24 PM -----

From: Brian Nickel/R10/USEPA/US  
To: Lindsay Guzzo/R10/USEPA/US@EPA  
Date: 06/23/2011 04:28 PM  
Subject: Re: Fw: Evaluation of Nutrient Removal - Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.

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Lindsay:

Yes I did; I have a printout of the slides, and you can download the full report using the link in the June 6th message (expand the sections below) from Foroozan Labib at Ecology. They were supposed to put the slides on an FTP site but I never received that link; if you want, I can check to see if they're available.

What TetraTech did, under contract to Ecology, was to do a rough cost estimate for upgrading WWTPs in Washington to 6 levels of nutrient removal: P removal to 1 mg/L and 0.1 mg/L, TIN removal to 8 mg/L and 3 mg/L, combined N & P removal to 8 mg/L and 1 mg/L respectively, and finally combined N & P removal to 3 mg/L and 0.1 mg/L respectively. They emphasized that they had to make a lot of simplifying assumptions so estimates are only accurate to -50/+100%.

However, in general, they found that nutrient removal, especially for P, can be installed without unacceptable sewer rate increases. For example, P removal to 0.1 mg/L could be paid for with an

average monthly sewer rate increase of \$13. However, there are some situations where this may not be the case (small facilities, and facilities that are of designs that are difficult to retrofit, like fixed film plants--trickling filters and RBC). Large conventional activated sludge, extended aeration, or MBR facilities are the cheapest to upgrade, on a per-gallon basis.

Bottom line, Ecology and TetraTech seem to have done some good work to ground truth/counterbalance some of the claims we hear from dischargers about how expensive/unattainable nutrient removal is.

Reply or stop by if you want to discuss further.

Thanks,

Brian Nickel, E.I.T.

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Lindsay Guzzo

[Hey Brian, Did you end up going to this? Did yo...](#)

06/23/2011 04:11:38 PM

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From: Lindsay Guzzo/R10/USEPA/US  
To: Brian Nickel/R10/USEPA/US@EPA  
Date: 06/23/2011 04:11 PM  
Subject: Re: Fw: Evaluation of Nutrient Removal - Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.

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Hey Brian,  
Did you end up going to this? Did you learn anything worth sharing???

Lindsay Guzzo  
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Brian Nickel

[Susan: I'd like to go to this. At first I thought this...](#)

06/14/2011 12:34:08 PM

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From: Brian Nickel/R10/USEPA/US  
To: Susan Poulsom/R10/USEPA/US@EPA  
Cc: Lisa Olson/R10/USEPA/US@EPA, Kathleen Collins/R10/USEPA/US@EPA, Lindsay Guzzo/R10/USEPA/US@EPA  
Date: 06/14/2011 12:34 PM  
Subject: Fw: Evaluation of Nutrient Removal - Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.

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Susan:

I'd like to go to this. At first I thought this might be related exclusively to nutrient removal at the King County South WWTP in Renton, but TetraTech's work (accessible via the link in Foroozan's June 6th

message) was very broad in scope and dealt with retrofitting all sorts of WWTPs for nutrient removal for both N and P. **As acting manager, is that OK with you?**

I'm copying Kathleen and Lindsay because I know they are working on permits where low nutrient limits will be required (Boise and Pocatello).

Thanks,

Brian Nickel, E.I.T.

Environmental Engineer  
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----- Forwarded by Brian Nickel/R10/USEPA/US on 06/14/2011 12:29 PM -----

From: "Ragsdale, Dave (ECY)" <RAGS461@ECY.WA.GOV>  
To: Lisa Olson/R10/USEPA/US@EPA, Brian Nickel/R10/USEPA/US@EPA, Susan Poulson/R10/USEPA/US@EPA  
Cc: Lisa Macchio/R10/USEPA/US@EPA, Laurie Mann/R10/USEPA/US@EPA, "Labib, Foroozan (ECY)" <flab461@ECY.WA.GOV>, "Roberts, Mindy (ECY)" <MROB461@ECY.WA.GOV>, Ben Cope/R10/USEPA/US@EPA  
Date: 06/14/2011 11:34 AM  
Subject: FW: Evaluation of Nutrient Removal - Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.

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FYI. The Tetra Tech office is easy walking distance from the RO but if you want to participate via computer you should contact Foroozan @ Ecology today. He will send you connection instructions for the webcast. Please forward this message to other staff you believe might be interested.

David Ragsdale, Engineer  
EPA Region 10, Office of Water & Watersheds  
360 407-6589

**From:** Labib, Foroozan (ECY)  
**Sent:** Thursday, June 09, 2011 4:40 PM  
**To:** Labib, Foroozan (ECY); dthompso@ci.tacoma.wa.us; sschafer@ci.yakima.wa.us; rlowe@co.pierce.wa.us; waynerobinson@lottonline.org; BRawls@spokanecounty.org; DPerry@lakehaven.org; Betsy.Cooper@kingcounty.gov; ed.thorpe@comcast.net; dmoss@spokanecounty.org; darnold@spokanecity.org; lekstro@co.pierce.wa.us; Winters, Nancy; Dave Peeler; RSamstag@carollo.com; Roe, Pat; Craig Hanson  
**Cc:** Moore, Bill (ECY); Emmett, Kathleen (ECY); Markus, John  
**Subject:** Evaluation of Nutrient Removal - Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.

Just a reminder that the nutrient removal presentation is scheduled for next Thursday June 16<sup>th</sup>, 1:30 – 4 PM. We still have conference room capacity in case you are able to attend the workshop in person. We will also make webcasting and teleconferencing available. Please let me know by the end of Tuesday June 14<sup>th</sup> if you are planning to attend or call in. Below is the Seattle address for Tetra Tech. Thanks.

Location: Conference Room # (TBD)  
Tetra Tech Inc.

1420 5th Ave, Sixth Floor  
(US BANK / CITY CENTRE BUILDING)  
Seattle, WA 98292  
(206)883-9300

- If you park in the City Centre / U.S. Bank Centre Parking Garage take the elevator to Floor 2 and then transfer to one of the adjacent elevators located on the east half of the same corridor. Take the elevator to the 6th Floor and check with the Tetra Tech receptionist.
- If you choose to not park in the City Centre I U.S. Bank Centre Parking Garage, then after entering the building take either the escalator or elevator to the 2nd Floor and then transfer to the elevator that serves Floors 4 – 13 to the 6th Floor.

*Foroozan Labib*

Water Quality Program  
Washington State Department of Ecology  
Tel: (360) 407-6439  
Fax: (360) 407-6426  
Email: flab461@ecy.wa.gov

**From:** Labib, Foroozan (ECY)  
**Sent:** Monday, June 06, 2011 2:08 PM  
**To:** 'dthompso@ci.tacoma.wa.us'; 'sschafer@ci.yakima.wa.us'; 'rlowe@co.pierce.wa.us'; 'waynerobinson@lotionline.org'; 'BRawls@spokanecounty.org'; 'DPerry@lakehaven.org'; 'Betsy.Cooper@kingcounty.gov'; 'ed.thorpe@comcast.net'; 'dmoss@spokanecounty.org'; 'darnold@spokanecity.org'; 'lekstro@co.pierce.wa.us'; 'Winters, Nancy'; 'Dave Peeler'; 'RSamstag@carollo.com'; 'Roe, Pat'; 'Craig Hanson'  
**Cc:** Moore, Bill (ECY); Emmett, Kathleen (ECY); 'Markus, John'  
**Subject:** Evaluation of Nutrient Removal - May 2011 Report and Workshop Presentation on Thursday June 16th, 1:30 - 4 PM.

Hello All,

Tetra Tech has completed their evaluation report and the report is available for download at the following link: [Final Report6-2-11.pdf \(22,528,559 bytes\)](#).

I know this would be a short notice, but since Ecology contract with tetra Tech ends on June 18<sup>th</sup>, we have arranged for Tetra Tech to give a presentation on the report at their Seattle office on Thursday June 16<sup>th</sup>, 1:30 – 4 PM. The conference room can accommodate 25 people and we will have webcasting plus conference call capability for those not attending in person.

I would like to get an idea on how many people will be interested in attending the presentation and how many would like to be on conference call (plus webcasting). Please let me know how many are in your party attending and/or conference calling by Friday June 10<sup>th</sup>.

Thank you for your interest and participation in this project.

*Foroozan Labib*

Water Quality Program

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